WIRELESS ACCESS SYSTEM FOR ALLOCATING AND SYNCHRONIZING UPLINK AND DOWNLINK OF TDD FRAMES AND METHOD OF OPERATION

ABSTRACT OF THE DISCLOSURE

There is disclosed a TDD frame transmission synchronization apparatus for use in a fixed wireless access network comprising a plurality of base stations capable of bidirectional time division duplex (TDD) communication with wireless access devices disposed at a plurality of subscriber premises. The TDD frame transmission synchronization apparatus comprises a frame allocation controller for receiving from a first radio frequency (RF) modem shelf associated with a first base station access requests generated by a first group of wireless access devices communicating with the first base station and determining from traffic requirements associated with the access requests a time duration of a longest downlink portion of TDD frames used by a first one of a plurality of RF modems in the RF modem shelf to communicate with a first wireless access device. The frame allocation controller further determines a frame allocation of the downlink portion and the uplink portion of TDD frames used by the plurality of RF modems to communicate with the first group of wireless access devices.